

**IN THE CLAIMS**

Please amend the claims as follows:

1. (Previously Presented) A muffler/exhaust pipe system comprising:  
a muffler having an outer shell formed from a composite material wherein a perforated pipe extends through said outer shell;  
at least one exhaust pipe connected to said perforated pipe;  
a collar having a wide end and a narrow end wherein said narrow end is fitted around said exhaust pipe;  
a multilayer bushing fitted around said wide end of said collar wherein said muffler shell is in contact with said bushing.
2. (Previously Presented) The muffler/exhaust pipe system as in claim 1, wherein said collar is clamped to said exhaust pipe.
3. (Previously Presented) The muffler/exhaust pipe system as in claim 1, wherein said collar is welded to said exhaust pipe.
4. (Previously Presented) The muffler/exhaust pipe system of claim 1, wherein said collar is constructed of steel.
5. (Previously Presented) The muffler/exhaust pipe system of claim 1, wherein said collar is a conically shaped collar.
6. (Previously Presented) The muffler/exhaust pipe of claim 1, wherein said bushing is constructed of materials selected from the group consisting of zirconia, stabilized or modified zirconia, polytetrafluoroethylene, polyimide, polyketone, polyetheretherketone, polyetherketone, and polyamide imide.
7. (Previously Presented) A muffler/exhaust pipe as set forth in claim 1, wherein said perforated pipe receives exhaust gases and fibrous material provided within said outer shell between said perforated pipe and said outer shell.
8. (Previously Presented) A muffler/exhaust pipe as set forth in claim 7, wherein said fibrous material comprises a needle felt material.
9. (Previously Presented) A muffler/exhaust pipe as set forth in claim 7, wherein said fibrous material comprises a loose wool-type product fed into said outer shell via a texturizing device.
10. (Previously Presented) A muffler/exhaust pipe as set forth in claim 7, wherein said muffler shell comprises first and second parts.

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11. (Previously Presented) A muffler/exhaust pipe as set forth in claim 10, wherein said fibrous material comprises first and second fibrous material preforms which are received respectfully in said first and second shell parts.
12. (Previously Presented) A muffler/exhaust pipe as set forth in claim 1, wherein said muffler comprises a bumper/muffler assembly, and said bumper/muffler assembly further comprising a heat shield provided between said bumper and said muffler outer shell.
13. (Previously Presented) A muffler/exhaust pipe as set forth in claim 1, wherein said muffler comprises a bumper/muffler assembly, and said bumper/muffler further comprises a cover for securing said muffler to said bumper.
14. (Previously Presented) A muffler/exhaust pipe as set forth in claim 1, wherein said muffler comprises a bumper/muffler assembly, and said bumper/muffler comprises a main body having front, rear, upper and lower surfaces, said front surface facing away from a vehicle, said rear surface facing toward the vehicle, said upper surface facing away from ground and said lower surface facing toward ground, and said main body including a recess formed in said rear surface and one of said upper and lower surfaces for receiving said muffler shell such that said main body provides impact protection for said muffler shell.
15. (Previously Presented) A muffler/exhaust pipe as set forth in claim 14, wherein a portion of said main body defines at least a part of an outer shell of said muffler.
16. (Previously Presented) A bumper/muffler/exhaust pipe system comprising:
  - a) a bumper/muffler assembly comprising a bumper, a muffler having an outer shell and a perforated pipe extending through said outer shell, said muffler being associated with said bumper;
  - b) at least one exhaust pipe;
  - c) a flex section for coupling said exhaust pipe to said perforated pipe;  
wherein the distance from a centerline through said perforated pipe and said composite muffler shell is longer in the middle section of said composite muffler shell than at either end of the composite muffler shell and
  - d) a multilayer bushing having an outer surface engaging said outer shell and an inner surface engaging said flex section.
17. (Previously Presented) A bumper/muffler/exhaust pipe system as set forth in claim 16, wherein said flex section is secured to the exhaust pipe by a method selected from the group consisting of welding and clamping.
18. (Cancelled)

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19. (Previously Presented) A bumper/muffler/exhaust pipe system as set out in claim 17, wherein said flex section extends only part way through said bushing and abuts said perforated pipe.
20. (Previously Presented) A bumper/muffler/exhaust pipe system as set out in claim 17, wherein said flex section extends completely through said bushing.
21. (Previously Presented) A bumper/muffler/exhaust pipe system as set out in claim 16, wherein said flex section comprises a flexible woven metal tube.
22. (Previously Presented) A bumper/muffler/exhaust pipe system comprising:
  - a) a bumper/muffler assembly comprising a bumper,
  - b) a muffler having a composite outer shell, said muffler being associated with said bumper, wherein said muffler further comprises metal ends caps at adjacent ends of said muffler;
  - c) a perforated pipe extending through said outer shell
  - d) at least one exhaust pipe coupled to said perforated pipe; and
  - e) a multilayer bushing having an outer surface engaging said outer shell and an inner surface engaging said flex section.
23. (Previously Presented) A bumper/muffler assembly as set forth in claim 22, wherein said perforated pipe receives exhaust gases and fibrous material provided within said outer shell between said perforated pipe and said outer shell.
24. (Previously Presented) A bumper/muffler assembly as set forth in claim 23, wherein said fibrous material comprises a needle felt material.
25. (Previously Presented) A bumper/muffler assembly as set forth in claim 23, wherein said fibrous material comprises a loose wool-type product fed into said outer shell via a texturizing device.
26. (Previously Presented) A bumper/muffler assembly as set forth in claim 23, wherein said fibrous material comprises first and second fibrous material preforms which are received respectfully in said first and second shell parts.
27. (Previously Presented) A bumper/muffler assembly as set forth in claim 22, further comprising a heat shield provided between said bumper and said muffler outer shell.
28. (Previously Presented) A bumper/muffler assembly as set forth in claim 22, further comprising a cover for securing said muffler to said bumper.
29. (Previously Presented) A bumper/muffler assembly as set forth in claim 22, wherein said bumper comprises a main body having front, rear, upper and lower surfaces, said front

surface facing away from a vehicle, said rear surface facing toward the vehicle, said upper surface facing away from ground and said lower surface facing toward ground, and said main body including a recess formed in said rear surface and one of said upper and lower surfaces for receiving said muffler shell such that said main body provides impact protection for said muffler shell.

30. (Previously Presented) A bumper/muffler assembly as set forth in claim 29, wherein a portion of said main body defines at least a part of an outer shell of said muffler.

31. (Previously Presented) A bumper/muffler assembly as set forth in claim 22, wherein said metal material comprises stainless steel.

32. (Previously Presented) A muffler/exhaust pipe system comprising:

- a) a muffler having an outer shell formed from a composite material wherein a perforated pipe extends through said outer shell;
- b) at least one exhaust pipe connected to said perforated pipe;
- c) a multilayer bushing fitted around said exhaust pipe and in contact with the interior of said muffler, where said bushing comprises multiple layers of materials.

33. (Previously Presented) The muffler/exhaust pipe system of claim 32, wherein said bushing comprises at least three layers of materials.

34. (Previously Presented) The muffler/exhaust pipe system of claim 33, wherein a first, inner layer, fitted around said exhaust pipe, comprises a heat-resistant material.

35. (Previously Presented) The muffler/exhaust pipe system of claim 33, wherein said first, inner layer comprises a ceramic material.

36. (Previously Presented) The muffler/exhaust pipe system of claim 33, wherein a second, middle layer comprises a heat resistant material.

37. (Previously Presented) The muffler/exhaust pipe system of claim 36, wherein said second, middle layer comprises a phenolic material.

38. (Previously Presented) The muffler/exhaust pipe system of claim 33, wherein a third outer layer comprises an expandable material.

39. (Previously Presented) The muffler/exhaust pipe system of claim 38, wherein said third outer layer comprises a rubberized phenolic material.

40. (Previously Presented) The muffler/exhaust pipe system of claim 39, wherein said third outer layer comprises a raised bead around said second, inner layer.

41. (Previously Presented) The muffler/exhaust pipe system of claim 40, wherein said interior of said muffler comprises a groove for receiving said raised bead.

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42. (Previously Presented) The muffler/exhaust pipe system of claim 41, wherein said groove comprises an elastomeric material.

43. (Previously Presented) The muffler/exhaust pipe system of claim 33, wherein said first, inner layer is welded to said exhaust pipe.

Rejections Under 35 U.S.C. § 103

In Item 1 of the Office Action, the Examiner rejects claims 1-11 and 32-43 under 35 U.S.C. §103(a) in view of U.S. Patent No.4,993,513 to Inoue et al. ("the '513 Patent") in combination with U.S. Patent No. 5,955,707 to Fritz ("the '707 Patent"). The Examiner states "it would have an obvious design choice to employ a multilayer bushing because depending on the application, different suitable materials and configuration would be needed as to sustained various environmental characteristics... the Examiner considers that any person with ordinary skill in the art would employ a specific bushing configuration depending upon the application constraints and desired results." The Examiner fails to provide *prima facie* case of obviousness.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (See also, M.P.E.P. 2143 Basic Requirements of a *Prima Facie* Case of Obviousness).

Applicants submit that the Examiner has failed to establish that the prior art references teach or suggest the use of a multilayer bushing as claimed. Further, Applicants submit that the Examiner has failed to show a reasonable expectation of success and has only alleged that there is some motivation to modify the base references. The multilayer bushing claimed "provide[s] a snug, expandable fit to the muffler shell and provide gas tight properties to the bushing assembly." Nowhere within the '513 or '707 Patent is such a multilayer bushing shown or suggested. Therefore, applicants respectfully request that the rejection of claims 1-11 and 32-43 be withdrawn.

In Item 2 of the Office Action, the Examiner rejects claims 12-17 and 19-31 (claim 18 having been cancelled) under 35 U.S.C. §103(a) in view of the '513 Patent in combination with the '707 Patent and U.S. Patent No. 5,726,398 to Zahn ("the '398 Patent"). As discussed above, Applicants respectfully submit that the Examiner has failed to establish a *prima facie* case of obviousness. Claims 12-15, which depend from claim 1 either directly or indirectly, independent claim 16, as well as claims 17 and 19-21 that depend from claim 16, and

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independent claim 22, as well as dependent claims 23-31 that depend from claim 22, all include "a multilayer bushing." Applicants respectfully submit that the Examiner has failed to establish that the prior art references teach or suggest the use of a multilayer bushing as claimed. Applicants further submit that the Examiner has failed to show a reasonable expectation of success and has only alleged that there is some motivation to modify the base references. Nowhere within the '513, the '707 Patent or the '398 Patent is such a multilayer bushing shown or suggested. Therefore, applicants respectfully request that the rejection of claims 12-17 and 19-31 be withdrawn.

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**CONCLUSION**

In light of the above, Applicants believe that this application is now in condition for allowance and therefore request favorable consideration.

If any points remain in issue, which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

If any fees are due in connection with the filing of this response, including any fee for a required extension of time under 37 C.F.R. § 1.136(a), including the fee for the requested three-month extension of time for which Applicants hereby petition, please charge all necessary fees to Deposit Account No. 50-0568.

Respectfully submitted,



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